

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :

Appl. No.10/625,149 : Confirm. No. 8274
H. Downman McCarty, II :
Brooke Schumm III :
Peter Popper, Applicants : Examiner: O. Flores Sanchez
Filed: July 23, 2003 : Group Art Unit 3724

**For: AN ANTI-SPALLING COMBINATION ON AN IMPACT TOOL
WITH AN IMPROVED HOLDING SYSTEM**

Honorable Commissioner of Patents and Trademarks
Mail Stop Patent Application, P.O. Box 1450
Alexandria, VA 22313-1450

CONTINUATION AND PRIORITY DATA

Continuation in part of PCT/US02/23448 and entry into the national stage of
PCT/US02/23448, continuation in part of U.S. provisional applications 60/307,198 filed
on July 23, 2001, and 60/356,804 filed on February 13, 2002

**Response to Office Action of July 21, 2009
and Request for Examiner Interview**

Summary of claim amendments and arguments:

Additional limitations have been added to put the case in condition for allowance:

The independent claims now commence: An impact tool for use on stone, concrete,
metal or similarly hard material comprising:..." This distinguishes the claim from
designs for wood chisels such as Zetterman (U.S. Pat. 1,409,638) who only describes
and claims a wood chisel.

In contrast to Zetterman (U.S. Pat. 1,409,638) who relied on a tenon and an air
gap to accomplish his objective for a wood chisel, this invention specifically demands no
air gap, i.e. no "positively open space 20" between the end of the chisel and the cap.
Therefore, the independent claims have been amended to specifically provide the words

“immediately adjacent to said striking end in order to avoid direct metal-to-metal contact and in order to eliminate any loss of energy or damage to said shaped reinforced polymeric material from any gap between said shaped polymeric material and said striking end....”

As stated in the supporting Declaration of James L. Glancey, Ph.D., P.E., submitted herewith (Glancey Decl., Jan. 19, 2010), the Zetterman '638 proposed wood handled- celluloid- capped wood chisel would not cut metal, stone, or concrete or other hard material which is the embodiment and use of the present invention explained in the specification. The claims have been restricted to a chisel that has the impact effectiveness specification for metal or stone.

Applicants respectfully point out that the invention is a shaped polymer cap of a selected material, that in combination with a more acute chisel angle, achieves a stated level of impact effectiveness. Most shaped polymer materials, regardless of the chisel angle will not achieve the stated level of impact effectiveness. Glancey Decl., Jan. 19, 2010 at 2. Smith, U.S. Pat. 4,497,355 is a wood chisel n invention directed to grooves on a chisel for sharpening the chisel accurately. For the same reasons the narrowing of claims in Applicants' prior reply overcame prior rejections, the modifications to the present claims overcome any combination of prior art with Smith's wood chisel.

As set forth in the Declaration of Professor James L. Glancey, Ph.D., P.E., drill rod has an extremely high modulus, many orders of magnitude higher than wood. A wood chisel would both deform and likely disintegrate before cutting drill rod even once, and would not withstand repeated use on masonry. Glancey Decl., Jan. 19, 2010 at 2-3. The claims specifically call for no deformation that affects effectiveness in over 250 hits.

Professor Glancey's Declaration states he has performed tests on celluloid and it is entirely unsuitable for the application to metal, stone, concrete or material of like stiffness. Glancey Decl., Jan. 19, 2010 at 4-5.

Applicants' arguments in its prior response are not moot and the Office is respectfully requested to fully review the Response of May 6, 2009 and the Declarations and Applicants' prior Response to the July, 2007 Office Action. The response Declarations, and literature of September 2, 2008, March 30, 2009 and May 6, 2009 are adopted in this Response.

Summary of claim amendments:

By way of illustration, claim 143 would now read with the latest change "underlined":

"143. (currently amended) An impact tool for use on stone, concrete, metal or similarly hard material comprising:

a shaft having a striking end and a working end; and

a shaped polymeric material, reinforced by a material selected from the group of fiber or mineral, to be impacted, disposed immediately adjacent to said striking end in order to avoid direct metal-to-metal contact and in order to eliminate any loss of energy or damage to said shaped reinforced polymeric material from any gap between said shaped polymeric material and said striking end.

said shaped polymeric material having a striking end area of said polymeric material adjacent to said striking end and an impact end area to be impacted roughly opposite said striking end area,

said shaped polymeric material being of sufficient cross-sectional area for transmitting impact upon the impact end area, of appropriate thickness through said cross-sectional area, and of sufficient modulus to enable greater than sixty-seven per cent impact effectiveness compared to a similar impact tool without said polymeric material disposed adjacent to said striking end, ~~and~~

said impact tool further being capable of being struck on said impact end area at least 250 times without deformation of said shaped polymeric material that alters said impact effectiveness of said impact tool, and

said impact tool further being capable of use on stone, concrete, metal or similarly hard material."

Discussion and Argument:

1. Current law re obviousness

The Supreme Court of the United States in KSR Int'l Co. v. Teleflex, Inc. 550 U.S. 398, 127 S.Ct. 1727, 167 L.Ed. 705 (2007) held:

“Neither the enactment of § 103 nor the analysis in *Graham* disturbed this Court's earlier instructions concerning the need for caution in granting a patent based on the combination of elements found in the prior art. For over a half century, the Court has held that a “patent for a combination which only unites old elements with no change in their respective functions ... obviously withdraws what is already known into the field of its monopoly and diminishes the resources available to skillful men.” Great Atlantic & Pacific Tea Co. v. Supermarket Equipment Corp., 340 U.S. 147, 152, 71 S.Ct. 127, 95 L.Ed. 162 (1950). This is a principal reason for declining to allow patents for what is obvious. The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. Three cases decided after *Graham* illustrate the application of this doctrine.”

550 U.S. at 415-416. Citing an earlier Supreme Court case, the Court continued:

“In *United States v. Adams*, 383 U.S. 39, 40, 86 S.Ct. 708, 15 L.Ed.2d 572 (1966), a companion case to *Graham*, the Court considered the obviousness of a “wet battery” that varied from prior designs in two ways: **1740 It contained water, rather than the acids conventionally employed in storage batteries; and its electrodes were magnesium and cuprous chloride, rather than zinc and silver chloride. The Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. 383 U.S., at 50-51, 86 S.Ct. 708. It nevertheless rejected the Government's claim that Adams's battery was obvious. The Court relied upon the corollary principle that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious. *Id.*, at 51-52, 86 S.Ct. 708. When Adams designed his battery, the prior art warned that risks were involved in using the types of electrodes he employed. The fact that the elements worked together in an unexpected and fruitful manner supported the conclusion that Adams's design was not obvious to those skilled in the art.”

550 U.S. at 415.

The Supreme Court in KSR cautioned against assuming that mere mention in art or literature would render inventions obvious:

“This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.”

KSR, 550 U.S. at 418-19.

The Court of Appeals for the Federal Circuit has had several recent cases interpreting KSR:

The law on the meaning of teaching is set out in a recent Federal Circuit case, In re Kubin, 561 F.3d 1351 (Fed. Cir. 2009):

“The Supreme Court’s admonition against a formalistic approach to obviousness in this context actually resurrects this court’s own wisdom in In re O’Farrell, which predates the Deuel decision by some seven years. This court in O’Farrell cautioned that “obvious to try” is an incantation whose meaning is often misunderstood:

It is true that this court and its predecessors have repeatedly emphasized that “obvious to try” is not the standard under § 103. However, the meaning of this maxim is sometimes lost. Any invention that would in fact have been obvious under § 103 would also have been, in a sense, obvious to try. The question is: when is an invention that was obvious to try nevertheless nonobvious?”

In re O’Farrell, 853 F.2d 894, 903 (Fed.Cir.1988). [The Court continued in Kubin]

To differentiate between proper and improper applications of “obvious to try,” this court outlined two classes of situations where “obvious to try” is erroneously equated with obviousness under § 103. In the first class of cases,

what would have been “obvious to try” would have been to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful.

Id. In such circumstances, where a defendant merely throws metaphorical darts at a board filled with combinatorial prior art possibilities, courts should not succumb to hindsight claims of obviousness. The inverse of this proposition is succinctly encapsulated by the Supreme Court’s statement in KSR that where a skilled artisan merely pursues “known options” from a “finite number of identified, predictable solutions,” obviousness under § 103 arises. 550 U.S. at 421, 127 S.Ct. 1727.

The second class of O'Farrell's impermissible "obvious to try" situations occurs where

"what was "obvious to try" was to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it."

Id. In such circumstances, where a defendant merely throws metaphorical darts at a board filled with combinatorial prior art possibilities, courts should not succumb to hindsight claims of obviousness.

853 F.2d at 903. Again, KSR affirmed the logical inverse of this statement by stating *1360 that § 103 bars patentability unless "the improvement is more than the predictable use of prior art elements according to their established functions." 550 U.S. at 417, 127 S.Ct. 1727....

These references, which together teach a protein identical to NAIL, a commercially available monoclonal antibody specific for NAIL, and explicit instructions for obtaining the DNA sequence for NAIL, are not analogous to prior art that gives "no direction as to which of many possible choices is likely to be successful" or "only general guidance as to the particular form of the claimed invention or how to achieve it." O'Farrell, 853 F.2d at 903. As the Board found, the prior art here provides a "reasonable expectation of success" for obtaining a polynucleotide within the scope of claim 73, Board Decision at 6, which, "[f]or obviousness under § 103 [is] all that is required." O'Farrell, 853 F.2d at 903. Thus, this court affirms the Board's conclusion as to obviousness.

IV.

For the reasons stated above, the Board did not err in finding appellants' claims obvious as a matter of law. Thus, this court need not address appellants' contention that the Board erred in finding its claims invalid under § 112 ¶ 1. Accordingly, this court affirms the decision of the Board."

In re Kubin, 561 F. 3d 1351 at 1358-1361 (Fed. Cir. 2009)

The Federal Circuit has also described obviousness and teaching as follows in another recent case:

"Although predictability is a touchstone of obviousness, the "predictable result" discussed in KSR refers not only to the expectation that prior art elements are capable of being physically combined, but also that the combination would have worked for its intended purpose. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 127 S.Ct. 1727, 1739-40, 167 L.Ed.2d 705 (2007). As the Supreme Court explained,

“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 1739 (emphasis added). The Supreme Court went on to state that “when a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.” *Id.* at 1740 (quoting Sakraida v. Ag Pro, Inc., 425 U.S. 273, 282, 96 S.Ct. 1532, 47 L.Ed.2d 784 (1976)) (emphasis added). The opposite conclusion would follow, however, if the prior art indicated that the invention would not have worked for its intended purpose or otherwise taught away from the invention. See United States v. Adams, 383 U.S. 39, 52, 86 S.Ct. 708, 15 L.Ed.2d 572 (1966) (upholding nonobviousness where references teaching away from the claimed combination would “deter any investigation into such a combination”); In re ICON Health & Fitness, Inc., 496 F.3d 1374, 1382 (Fed.Cir.2007) (“[A] reference teaches away from a combination when using it in that combination would produce an inoperative result.”). An inference of nonobviousness is especially strong where the prior art’s teachings undermine the very reason being proffered as to why a person of ordinary skill would have combined the known elements.”

DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc., 567 F.3d 1314 (Fed Cir. 2009).

“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”

In re Kahn, 441 F. 3d 977, 988 (Fed. Cir. 2006).

Cook Chemical insists, however, that the development of a workable shipper-sprayer eluded Calmar, who had long and unsuccessfully sought to solve the problem. And, further, that the long-felt need in the industry for a device such as Scoggin's together with its wide commercial success supports its patentability. These legal inferences or subtests do focus attention on economic and motivational rather than technical issues and are, therefore, more susceptible of judicial treatment than are the highly technical facts often present in patent litigation. See Judge Learned Hand in Reiner v. I. Leon Co., 285 F.2d 501, 504 (2 Cir. 1960). See also Note, Subtests of ‘Nonobviousness’: A Nontechnical Approach to Patent Validity, 112 U.Pa.L.Rev. 1169 (1964). Such inquiries may lend a helping hand to the judiciary which, as Mr. Justice Frankfurter observed, is most ill-fitted to discharge the technological duties cast upon it by patent legislation. Marconi Wireless Telegraph Co. of America v. United States, 320 U.S. 1, 60, 63 S.Ct. 1393, 87 L.Ed. 1731 (1943). They may also serve to ‘guard against slipping into use of hindsight,’ Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co., 332 F.2d 406, 412 (1964), and to resist the temptation to read into the prior art the teachings of the invention in issue.

Graham v. John Deere Co., 383 U.S. 1, 35-36 (1966).

Discussion of Office Action:

General arguments:

At page 4 of the Office Action, the assertion is made:

“It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Zetterman with polyamide or fiber-reinforced nylon for the purpose of having a stronger material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.”

While this is asserted, it in fact ignores the details of the Zetterman ‘638 art which required a tenon and air gap, and thus movement of the chisel cap. That would result in the destruction of the cap if used on metal stone, concrete or similar hard material. Decl. James L. Glancey Jan. 19, 2020 at 3-4.

The suggestion of obviousness to use “polyamide or fiber-reinforced nylon,” Off. Act. at 4, is not consistent with experimental evidence. The alleged obviousness is belied by the failures which were experienced by Dr. James L. Glancey as he tested a variety of materials:

“a number of simple hammer impact tests were conducted on a range of thermoplastics, including elastomers (Hytrel™ family), polyacetal (Delrin™), carbon fiber reinforced materials, polyesters, and nylons. Most materials failed readily after only a few blows.”

See, Griffith M. et al, “Polymer Composite-Based Vibration and Noise Emission Controls for Hand-Struck Impact Tools,” Proceedings of the ASME 2007 International design Engineering Technical Conferences & Computers and Information in Engineering Conference, Sept. 4-7, 2007 (DETC 2007-35699) (ASME 2007) (“Griffith” or the “Griffith article”) at 6-7.

The failure of celluloid to be a useful material to accomplish the impact effectiveness as referenced in Dr. Glancey's current declaration also shows that the assumption by the Patent Office of obviousness is not accurate. Decl. James L. Glancey, Jan. 19, 2010 at 4-5.

As set forth by Dr. James L. Glancey is his prior Declaration of Mar. 28, 2009 in this case:

"I have been responsible for extensive testing of the tool on which this patent application is pending, namely a chisel marketed under the trademark Hard Cap which I tested extensively and was the basis for my attached extensive article on the ergonomics and advantages of the tool. Under the direction of co-inventor Dr. Peter Popper, a former employee of the DuPont Corporation, and Mr. McCarty, I had been directed to test materials which they believed advantageous to use for a tool cap to minimize vibration and sound emission, as well as eliminate metal spalling. As co-author and head of the project, I published, am familiar with and participated in the work associated with the attached paper Griffith M. et al, "Polymer Composite-Based Vibration and Noise Emission Controls for Hand-Struck Impact Tools," Proceedings of the ASME 2007 International design Engineering Technical Conferences & Computers and Information in Engineering Conference, Sept. 4-7, 2007 (DETC 2007-35699) (ASME 2007) ("Griffith" or the "Griffith article")."

Id. at 1-2 . Dr. Glancey also pointed out in that declaration:

The Smith art, by its terms, has only application to wood chisels: "The present invention relates to wood cutting devices and implements and more particularly to wood chisels, plane iron blades, and the like wherein the blade portion of these devices is provided with grinding guides for enabling the cutting edge to be properly sharpened." Smith, U.S. Pat. 4,497,355, col. 1, lines 6-10. As a sophisticated practitioner in tool testing and design testing (not merely one of ordinary skill), and having viewed and tested many tools, I read that Smith art to call for "the blade portion of such device ...[to be] provided with grinding guides which an individual may use to assure that the cutting edge is sharpened squarely and that the angle of the beveled surface is properly angled. Smith '355 at col. 1, 55-61. Merely looking at the Smith art and the Jeffrey art together would not lead to the combination this inventor suggested because as I have shown in testing and as set in the Griffith article, most polymer materials would not survive the repeated hand chisel blows with or without having a more acute point to the chisel. Secondly, because the dynamics and stresses of a metal cutting chisel or orders of magnitude greater than those of a wood chisel, what is functional with a

wood chisel, assuming the Smith patent had focused on the angle at all, is not suggestive of functionality with a metal-cutting chisel. Only certain materials and a properly selected chisel angle would yield the results of this invention, and then only after extensive testing. The obvious conclusion to me as a skilled practitioner in the art, based on the Jeffrey art, is to find is to find some polymer material that will hold up under repeated hammering (Jeffrey suggested a non-polymeric material, copper as the preferred mode). However, that would not yield the claimed cutting effectiveness.”

Glancey Decl. March 28, 2009 at 4.

Examining the Zetterman ‘638 art, the art by its terms states:

“My invention relates to improvements in chisel handles, *having reference to the handles of wood that are applied to carpenters’ chisels*, and the object of my improvement is to improve the butt end that receives the blows of the hammer or mallet by means of the application to the said butt end or butt of a cap of special form to the end of the handle body, and involving a special shaping of the said end for cooperating therewith, whereby there will be provided a special cushioning device having special advantages in use and also providing a protection for the said end of the handle body.

Figure 1 is a side elevation of a carpenter’s chisel that is provided with a handle that embodies my improved cap at the butt end. [emphasis added].”

The only claim of Zetterman ‘638 reads: “I claim as my invention:-- A handle having a celluloid blow receiving cap united therewith by a tenon inclosed socket joint arranged so that the blow may be transmitted to the annular surface surrounding the joint.”

Like the Smith ‘355 art, the Zetterman ‘638 art is related to wood chisels, not to cutting drill rod, the measuring stick of effectiveness for the claims in the present McCarty invention.

Zetterman points out “While certain materials known as composition or hard rubber may be used, these are not entirely satisfactory. The one material that I have

found to be satisfactory after extensive trials is celluloid, and which is superior to all others.”

At no place in the Zetterman ‘638 art do words appear that relate to impact effectiveness, nor is there any suggestion of any ability to cut metal.

As pointed out by Dr. Glancey:

“Secondly, because the dynamics and stresses of a metal cutting chisel or orders of magnitude greater than those of a wood chisel, what is functional with a wood chisel, assuming the Smith patent had focused on the angle at all, is not suggestive of functionality with a metal-cutting chisel. Only certain materials and a properly selected chisel angle would yield the results of this invention, and then only after extensive testing. The obvious conclusion to me as a skilled practitioner in the art, based on the Jeffrey art, is to find is to find some polymer material that will hold up under repeated hammering (Jeffrey suggested a non-polymeric material, copper as the preferred mode). However, that would not yield the claimed cutting effectiveness.

Glancey Decl. Mar. 28, 2009 at 3-4.

Although it is asserted in the Office Action that Zetterman discloses the invention including: “a shaped polymeric material 13 reinforced by a material selected from the group of fiber or mineral (see Col. 3, line 24)...,” in fact careful review of Zetterman ‘638 at line 24 does not show those words or any sense of these words

Element 13 of Zetterman ‘638 turns out to be quite different from the present invention. The claims in the present invention have been amended to make this clear.

Zetterman states:

“The bottom face 18 is in the form of an annular seat or base that is a fit for and adapted to cooperate with the opposed platform 14 on the handle end portion 12. Extending upwardly from the base 18 is a recess or socket 19 having a cylindrical form that is a fit for the tenon 15 along the peripheral portion of the said tenon 15. As to the length or depth of the socket 19 relatively to the length of the tenon 15 it will be noted that with the base 18 seated on the platform 14 there is provided a positively open space 20 between the tip end face 21 of the tenon 15 and the opposed end wall 22 of the socket 19.

Thus the open space 20 serves to provide clearance between the top end wall portion 23 of the cap 13 and the opposed end face of the tenon 15.”

Zetterman, p. 1, col. 2, lines 71-89.

The only reference in the entire Zetterman ‘638 art to the word “reinforcement” is as follows:

“In order to provide for such a construction of the tenon 15 and at the same time insure strength and serviceability to the part I may provide some form of reinforcement therefor such as the metal rod 24 shown, which extends downwardly though the tenon 15 and for an appreciable distance into the handle body 10 [emphasis supplied].”

Zetterman ‘638, col. 2, lines 104 to col. 3, line 3.

“The part” to which Zetterman is referring is the “tenon 15”. No reference is made to reinforcing the cap.

Thus the teaching of the Zetterman ‘638 patent is to provide a metal rod, maybe reinforce it, and to provide an air gap or clearance.

The present McCarty invention has no tenon 15, no open space 20, and none of the elements related to those elements.

Discussion of modifications to claims:

The present independent claims have been clarified.

The claim now commences “An impact tool for use on stone, concrete, metal or similarly hard material comprising:...

This distinguishes this tool from chisels such as Smith, Jeffery and Zetterman ‘638 which are wood chisels. See Zetterman ‘638, claim 1.

Next, in the independent claims, the word “immediately” has been added to the phrase “a shaped polymeric material, reinforced by..., disposed immediately adjacent to said striking end in order to avoid direct metal-to-metal contact and in order to eliminate any loss of energy or damage to said shaped reinforced polymeric material from any gap between said shaped polymeric material and said striking end...”

The purpose of this claim modification is to distinguish from the elements of Zetterman ‘638 because it is the snugly fitted reinforced shaped polymer cap in conjunction with the more acute chisel angle achieving a certain impact effectiveness that is the scope of the independent claims.

As set forth in the Glancey Declaration, the presence of the “positively open space 20”, the gap called for in Zetterman ‘638, must be eliminated and is eliminated in the McCarty invention because such a gap is fatal to the integrity of the cap. See Glancey Decl. Jan. 19, 2009 at 3-4.

As set forth in the Glancey Declaration, the celluloid cap form by Zetterman is not a satisfactory material from either a strength viewpoint to achieve impact effectiveness (lack of internal strength) nor is it economically feasible to use to mold a cap. Glance Dec. Jan. 19, 2010 at 3-4.

The argument that Zetterman anticipates the present invention is without foundation. This present McCarty invention has no “positively open space 20”, no “tenon 15”, and the inclusion of an air gap is antithetical to the function of the McCarty invention and would result in lost of its integrity See, Glancey Decl. Jan. 19, 2009 at 3-4.

Further, even Zetterman states that he only found one material, celluloid, after extensive testing to perform satisfactorily for his wood chisel. Zetterman p. 2 col. 1, lines 6-11. Clearly no material was obvious in Zetterman's time for even his wood chisel.

Dr. Glancey, in the Griffith article he co-authored, stated:

As referenced in the Griffith article at p. 6, "a number of simple hammer impact tests were conducted on a range of thermoplastics, including elastomers (Hytel™ family), polyacetal (Delrin™), carbon fiber reinforced materials, polyesters, and nylons. Most materials failed readily after only a few blows."

See Griffith article at 6-7.

Reference is made by Dr. Glancey in his March 28, 2009 Declaration to Jeffrey (U.S. Patent 3,320,986) as to the subtlety and difficulty of the problem overcome by this invention:

"Jeffrey's cap and invention suffers from the further economic and ergonomic disadvantage that it must be "broken in" as described by Jeffrey in order to deform the cap. The McCarty invention is ready-to-use and needs no worker use or modification to be used. Moreover, once a thermoplastic begins to deform, it will continue to do so in a cap formulation and disintegrate as the experiments with the GRIP tool show. The worker is left hitting bare metal and suffers the increased physical vibration to the hand, and vibration as a high pitched and dangerous noise, and the risk of spalling and chipping. Jeffrey referenced nylon, but when ordinary nylon was tested, it failed in our University of Delaware tests referenced in the Griffith article."

See Glancey Declaration Mar. 28, 2009 at 12.

These facts and testimony lead to the conclusion that the invention is clearly not anticipated by Zetterman '638 because the present McCarty invention is not for wood chisels and does not contain the multiple elements of Zetterman; it deliberately eliminates them, and adds different elements.

Further, the invention is not obvious for the reasons stated by the Federal Circuit in In re Kubin, 561 F.3d 1351 (Fed. Cir. 2009):

To differentiate between proper and improper applications of “obvious to try,” this court outlined two classes of situations where “obvious to try” is erroneously equated with obviousness under § 103. In the first class of cases,

what would have been “obvious to try” would have been to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful.

Id. In such circumstances, where a defendant merely throws metaphorical darts at a board filled with combinatorial prior art possibilities, courts should not succumb to hindsight claims of obviousness. The inverse of this proposition is succinctly encapsulated by the Supreme Court’s statement in KSR that where a skilled artisan merely pursues “known options” from a “finite number of identified, predictable solutions,” obviousness under § 103 arises. 550 U.S. at 421, 127 S.Ct. 1727.

The second class of O’Farrell’s impermissible “obvious to try” situations occurs where

“what was “obvious to try” was to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it.”

Id. In such circumstances, where a defendant merely throws metaphorical darts at a board filled with combinatorial prior art possibilities, courts should not succumb to hindsight claims of obviousness.

853 F.2d at 903.

As observed in the Declaration of Professor James L. Glancey, Ph.D., P.E., a number of materials were tried and failed to achieve the results of the invention, and the competition chisel that attempted to knock off the invention was a failure.

While it is easy to say that it would be obvious to try some material, the law, as set out in Kubin, does not render an invention obvious because the world has a dashboard of possibilities. As set out in the Griffith article, and as even Zetterman stated after his extensive testing (Zetterman ‘638 at p.2 line 10): finding the material that works to

achieve the result in the claims required invention by Applicants, and further, it is not the material that makes this present invention, it is the combination of particular materials with the selected range of a more acute chisel angle that enables the impact effectiveness and achieves the ergonomic advantages. Further, this invention was not merely a new material, the invention was finding a material that in cooperation with a decreased including angle, i.e. a chisel of more acute angle, one could achieve certain changes in safety and vibration while still maintaining high cutting effectiveness to protect the worker from fatigue.

Thus, finding the combination in the invention required a combination of elements and concepts, as well as testing for a material that met the multiple objectives of the inventors.

Referring to recent case law in the Federal Circuit, there are thousands of combinations of shapes, edges, materials and integration of elements available for chisels in a crowded art area. The key elements of this invention, and the limits to the claims of the invention, is that the invention only claims reinforced polymers that in combination with a more acute chisel angle achieve 67 percent impact effectiveness.

This inventor selected a certain material and combined it with a re-designed chisel to achieve certain objectives. No art references the combination, and among thousands of patents, and art, no chisel suggested this material, much less combining the material in a particular way with a change in the chisel structure to achieve the invention's objectives. As stated by the Court of Appeals for the Federal Circuit in Kubin, simply referencing that disparate elements exist in the art is not sufficient to show obviousness.

To differentiate between proper and improper applications of “obvious to try,” this court outlined two classes of situations where “obvious to try” is erroneously equated with obviousness under § 103. In the first class of cases,

what would have been “obvious to try” would have been to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful.

Id. In such circumstances, where a defendant merely throws metaphorical darts at a board filled with combinatorial prior art possibilities, courts should not succumb to hindsight claims of obviousness. To differentiate between proper and improper applications of “obvious to try,” this court outlined two classes of situations where “obvious to try” is erroneously equated with obviousness under § 103. In the first class of cases,

what would have been “obvious to try” would have been to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful.

Id. In such circumstances, where a defendant merely throws metaphorical darts at a board filled with combinatorial prior art possibilities, courts should not succumb to hindsight claims of obviousness.” Kubin, 853 F.2d at 903.

The Court of Appeals also held in Kubin that obviousness is not present when there is: “no direction as to which of many possible choices is likely to be successful” or ‘only general guidance as to the particular form of the claimed invention or how to achieve it.’ O’Farrell, 853 F.2d at 903.” In re Kubin, 561 F. 3d 1351 at 1360-1361 (Fed. Cir. 2009)

No art suggested modifying the chisel to a more acute angle. There are no such words or context in Smith ‘355. The Smith invention is about proper sharpening: “Therefore, a need exists for some practical means to assist an individual in properly sharpening woodwork cutting devices such as a wood chisel or plane iron blade in order

that the resulting cutting edge will be properly aligned and beveled.” Smith ‘355 at col. 1 lines 48-52.

The Declarations of Professor Glancey teach that the edge suffers more wear and breaks down more rapidly at a more acute angle. No art suggested reinforced polymer caps, and more particularly, no art suggested a particular reinforced polymer, that combined with a more acute chisel angle, would accomplish the objectives of reducing spalling, modifying the frequency characteristics in an ergonomic way to reduce hand stress and sound stress. The fact that a number of tests of candidates failed, see Griffith at 6-7, and a competitor’s knock-off failed, Glancey Decl. Mar. 28, 2009 at 8-9, further supports the non-obviousness of the invention. The commercial success cited in the McCarty Declaration submitted in conjunction with the prior Applicants’ Response is more secondary evidence of nonobviousness. There has been a long-felt need for improvement in metal-cutting chisels. Dr. Glancey testified in his Declaration:

“Candidly, the McCarty invention is one of the few advances in ergonomic chisel design to have occurred in at least the last 40 years....”

Decl. Glancey Mar. 27, 2009 at 14.

Applying Zetterman’s reinforcement in the form of a tenon in his 1922 wood chisel patent, where he proposed a celluloid cap, along with the Smith patent for grooves to better align the chisel angle when sharpening it runs afoul of the Supreme Court’s caution in KSR cautioned against assuming that mere mention in art or literature would render inventions obvious:

“This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.”

Response to Specific Office Action points:

3. Paragraph 3 of the Office Action of July 21, 2009 (O.A.):

The assertion is made at p. 2 of the Office Action: “Zetterman discloses the invention including: “a shaped polymeric material 13 reinforced by a material selected from the group of fiber or mineral (see Col. 3, line 24)....,” In fact, careful review of Zetterman ‘638 at line 24 does not show those words, so it neither teaches nor discloses that art.

As previously argued at p 12-13 above, The only reference in the entire Zetterman ‘638 art to the word “reinforcement” is as follows: “In order to provide for such a construction of the tenon 15 and at the same time insure strength and serviceability to the part I may provide some form of reinforcement therefor such as the metal rod 24 shown, which extends downwardly though the tenon 15 and for an appreciable distance into the handle body 10 [emphasis supplied]. Zetterman ‘638, col. 2, lines 104 to col. 3, line 3.

“The part” to which Zetterman is referring is the tenon. No reference is made to reinforcing the cap.

Thus the teaching of the Zetterman ‘638 patent is to provide a metal rod, maybe reinforce it, and to provide an air gap or clearance.

The allegation by the examiner that there would be greater than sixty-seven impact effectiveness is not supported by any evidence because merely because the blow would be “received” is not sufficient to prove any particular effectiveness. As pointed out by Dr. Glancey in his Declaration, celluloid is too soft and it crushed too easily.

Thus, it would absorb too much of a blow. Glancey Decl. Jan. 19, 2009 at p. 4, Glancey Decl. Mar. 28, 2009 at 5.

As to claims 144 and 147, there is no evidence that the head of Zetterman is capable of lowering sound and hand vibration frequency ranges. Because Dr. Glancey's experiments show that celluloid is too soft for use on the cap of the present invention, the celluloid probably should lower sound ranges, but the metal pin (Zetterman '638 element 15) and the secondary strike of metal on metal through the positively open space 20 does not support the Examiner's hypothesis of reduced sound or hand vibration frequency. Definitive results of reduced sound or hand vibration frequency were shown for the present invention in the Griffith article.

Applicants acknowledge that claim 150, is only allowable as a dependent claim to claim 143.

Applicants acknowledge that claim 156 is only allowable as a dependent claim to claim 151.

5. Paragraph 5 of the Office Action of July 21, 2009 (O.A.): As argued previously, Zetterman discloses a different invention, particularly containing the tenon (15) and the positive open space (20) in a socket 19. The cap structure (13) is proposed to move. Such an arrangement is not feasible to accomplish the cutting of stone, concrete, metal or similarly hard material.

As to Smith '335, the assertion was previously made by the Patent Office that "Smith teaches the use of an included angle of 65 degree for the purpose of ... prolonging its life."

Smith uses the word "prolong" in one place:

“To assure the effectiveness of wood chisel 10 and to further prolong its life, it is important that the cutting edge 22 be sharpened appropriately and this includes sharpening the beveled cutting surface 20 at an appropriate angle.” Smith ‘335, Col. 3, lines 11-15. The quoted passage in the Office Action does not appear.

As set out in the Declaration of Dr. James Glancey of March 28, 2009, Smith does not state the asserted passage of using an included angle of 65 degrees to prolong the life of a wood chisel.

Dr. Glancey opines the obvious contrary conclusion for anyone with knowledge about chisels:

“Based on my years of experience working with testing, and from practical observation, the sharper the angle of the chisel, the shorter the life of the chisel. A less acute angle enables the impact of the edge upon the object being cut, here a metal edge applied to cut a drill rod, to be more evenly distributed on the end of the chisel. If the angle is made sharper, more pressure is concentrated in a smaller area, and the edge of the chisel breaks down faster.”

The Smith art, by its terms, has only application to wood chisels: “The present invention relates to wood cutting devices and implements and more particularly to wood chisels, plane iron blades, and the like wherein the blade portion of these devices is provided with grinding guides for enabling the cutting edge to be properly sharpened.” Smith, U.S. Pat. 4,497,355, col. 1, lines 6-10. As a sophisticated practitioner in tool testing and design testing (not merely one of ordinary skill), and having viewed and tested many tools, I read that Smith art to call for “the blade portion of such device ...[to be] provided with grinding guides which an individual may use to assure that the cutting edge is sharpened squarely and that the angle of the beveled surface is properly angled. Smith ‘355 at col. 1, 55-61.

Decl. Glancey Mar. 28, 2009 at 2-3.

Dr. Glancey further articulates this point in his Declaration of Jan. 19, 2010:

“Secondly, because the dynamic forces and stresses of a metal cutting chisel are orders of magnitude greater than those of a wood chisel, what is functional with a wood chisel, assuming the Smith patent had focused on the angle at all, is not suggestive of functionality with a metal-cutting chisel. Only certain materials and a properly selected chisel angle would yield the results of this invention, and then only after extensive testing.”

Glancey Decl. Jan. 19,2010 at 2-3.

No one would use the Zetterman '638 chisel for cutting metal, stone or concrete, and no person would make the angle more acute to prolong the life of the chisel.

6. Paragraph 6 of the Office Action of July 21, 2009 (O.A.):

The suggestion of obviousness to use "polyamide or fiber-reinforced nylon," Off. Act. At 4, is not consistent with experimental evidence. The obviousness is belied by the failures which were experienced by Dr. James L. Glancey as he tested a variety of materials. The alleged obviousness is belied by the failures which were experienced by Dr. James L. Glancey as he tested a variety of materials:

"a number of simple hammer impact tests were conducted on a range of thermoplastics, including elastomers (Hytrel™ family), polyacetal (Delrin™), carbon fiber reinforced materials, polyesters, and nylons. Most materials failed readily after only a few blows."

See, Griffith M. et al, "Polymer Composite-Based Vibration and Noise Emission Controls for Hand-Struck Impact Tools," Proceedings of the ASME 2007 International design Engineering Technical Conferences & Computers and Information in Engineering Conference, Sept. 4-7, 2007 (DETC 2007-35699) (ASME 2007) ("Griffith" or the "Griffith article") at 6-7.

The failure of celluloid to be a useful material to accomplish the impact effectiveness as referenced in Dr. Glancey's current declaration also shows that the assumption by the Patent Office of obviousness is not accurate. Decl. James L. Glancey, Jan. 19, 2010 at 4-5.

7. Paragraph 7 of the Office Action of July 21, 2009 (O.A.):

Applicants acknowledge that multiple dependent claims 157-158 are only allowable as dependent claims to the underlying claims.

Response to Examiner's comments on the Examiner Interview:

Applicants stand by their description of the Interview. The applicants and attorney appeared early; the applicants and attorney were in a meeting in the building with the supervising primary examiner Mr. Ashley and heard no fire alarm and did not evacuate the building. The applicants and attorney had signed in and called the examiner at approximately 10:45 a.m. After several tries, Mr. Ashley was contacted. The MPEP admonishes applicants: "An appointment for interview once arranged should be kept. Many applicants and attorneys plan trips to Washington or off-site video conferencing locations in related upon such appointments."

Applicant stands by the reference to allowability. The examiner asked that Mr. Schumm immediately submit the amended claims that afternoon for final review because he expected to review them that day and was trying to meet a deadline he discussed with SPE Ashley. The MPEP section 707.07(g) states: "Piecemeal examination should be avoided as much as possible. The examiner ordinarily should reject each claim on all valid grounds available, avoiding however, undue multiplication of references. (See MPEP §904.03.)." MPEP section 904.03 states that

"it is a prerequisite to a speedy and just determination of the issues involved... that a careful and comprehensive search,... be made in preparing the first action on the merits so that the second action on the merits can be made final or the application allowed with no further searching other than to update the original search."

The Office Action at p. 6 concedes that “the claims... would overcome the previous rejection.”

In reviewing the search notes, no information is shown that any substance was found in the search data and references of July 21, 2009. It is not clear how an update occurred, how the Zetterman art was found, and why art from 1922 that was never before referenced was now used to create a new grounds for rejection. Zetterman ‘638, a 1922 wood chisel patent with different elements that used a metal reinforcement rod and an air gap, was used to reject the claims on a completely new basis, allegedly rendering all of Applicants’ arguments moot.

Relying on MPEP §707(g), Applicants assumed that if the prior rejections were overcome, new grounds would not be asserted, particularly as the file history shows a non-final rejection by a now retired examiner dating from 10-14-2004, a restriction after the first office action on Nov. 17, 2005, a non-final rejection on June 25, 2007, and now a non-final rejection on July 20, 2009. Applicant understood that an update would be undertaken, but knew of no further art since the application and priority date, and no new art previously available was found by the Office that affected allowability. Thus, Applicant reasonably assumed that the case would be allowed if the prior rejection was overcome, which was done at the interview by the proposed modifications. Off. Act. ¶8 at p. 5.

Summary of Amendments to the Claims

Claims 1-122 are cancelled. Applicant has retained the right to present the method claims set out in claims 118-122 in a divisional application, and preserves the right to

present the unelected claims. New claims numbered 123-142 were presented in the prior office action, and those Claims 123-142 are cancelled, though the right to present other species in a divisional application is reserved.

Claims 143-175 were presented as new claims in Applicants' preceding response to an office action, and the amendments to claims 143 and 152 are presented.

Claims 164-175 are withdrawn with the reservation of rights to present them in a divisional application.

The Office is authorized to charge any fees to my deposit account 50-3153 that may be required, though none are believed due as the extension fees have been paid.

Petition for 1.136 extension of 3 months

Petition is made for an extension of 3 months to the SSP.

Request for Examiner Interview

An interview at the Patent Office to discuss any issues regarding allowability is respectfully requested.

Respectfully,

/s/ Brooke Schumm III /_____
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I certify I caused the above to be filed electronically in the USPTO with proper extension fees paid this 21st day of January, 2010.

/s//Brooke Schumm III/
Brooke Schumm III